BACKGROUNDER

Child & Adolescent Nutrition, Health & Physical Activity

chapter 3

Brochures

http://ific.org/publications/brochures

Starting Solids: Nutrition Guide for Infants and Children 6 to 18 Months of Age

Helping Your Overweight Child

Prevent Childhood Choking: It's Up To You

Starting Solids: A Guide for Parents and Child Care Providers

Understanding Food Allergy

Kidnetic.com Leader's Guide: Healthy Eating & Active Living Ideas & Activities for Kids & Families

You're the Role Model! The Kidnetic.com Real-Life Guide to Helping Your Kids Eat Right and Be Active

Q & A's

http://ific.org/publications/qa

Questions and Answers About Pesticides and Children's Health

Questions and Answers About the Nutritional Content of Processed Baby Food

Food Insight Articles

http://ific.org/foodinsight

Choking Prevention: The Key to Childhood Safety November/December 2005

Going To School with Food Allergies September/October 2004

Blow Out The Candles! KIDNETIC.com Celebrates its First Birthday with One Million Visitors July/Aug. 2003

Choking and Kids: Prevention Is the Key July/Aug. 2003

The Challenge of Type 2 Diabetes in Children Jan./Feb. 2003

Soy Protein Offers Hope for Developing Countries Sept./Oct. 2002

Kidnetic.com:Tap Into The Energy May/June 2002

Metabolic Syndrome: Lifestyle Strikes Again March/April 2002

Nutrition, Health & Physical Activity During Childhood and Early Adolescence

Nutritionists and other health professionals have long recognized the importance of establishing healthful nutrition practices during childhood and early adolescence. Diet and exercise patterns adopted during these prime developmental years set the stage for life-long habits that can mean the difference between vitality and infirmity in later years.

Infant Nutrition

The period from birth to two years is a critical window for the promotion of optimal growth, health, and behavioral development. Based on longitudinal studies, it is also the peak age for growth faltering, certain micronutrient deficiencies, and common childhood illnesses such as diarrhea. Nutritional deficits that occur during these formative years have immediate and long-term consequences. The former includes delayed motor and mental development; the latter is associated with impairments in intellectual performance, work capacity, reproductive outcomes, and overall health during adolescence and adulthood. For these reasons, adequate nutrition is essential to the achievement of a child's full human potential.

The World Health Organization/UNICEF infant feeding guidelines support exclusive breast-feeding for the first six months of life and the continuation of breast-feeding, together with appropriate complementary feeding, for up to two years of age or beyond. Breast-feeding has nutritional as well as immunological benefits for the infant. In addition, current scientific evidence shows that breast-feeding may have a protective effect against childhood obesity. While breast-feeding is highly encouraged, iron-fortified infant formula is also acceptable for infants, if breast-feeding is not possible.

Complementary feeding is appropriate when breast-feeding alone is insufficient to meet infants' nutrient requirements and when other solids and liquids are needed along with breast milk. Developmental readiness for complementary foods varies considerably among infants. The American Academy of Pediatrics (AAP) recommends that parents introduce the first complementary foods between four and six months of age.

According to the AAP, babies should be fed simple, basic foods first. A single-grain, iron-fortified infant cereal is the best choice. Semiliquid ground rice cereal is often recommended because it is gluten-free and less-often associated with an allergic response (gluten is a protein that can sometimes trigger allergic reactions). The iron in fortified infant cereal helps prevent iron-deficiency anemia, a common nutritional disorder during infancy (around six months of age, babies' natural iron stores are depleted). Once infants master that, they can gradually move up to

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strained or mashed foods, and, somewhere between seven to 10 months of age, finely chopped table foods. In addition to age, the following are some additional indications that a baby is ready to begin solid foods:

- The infant sits with help or support.
- When on its stomach, the infant pushes up on arms with straight elbows.
- The infant is interested in food when others eat.

One-at-a-time is the best approach for introducing new foods to babies. This gives them the chance to get accustomed to new tastes and textures and enables parents to identify adverse reactions to specific foods. If a particular food provokes a reaction (e.g. diarrhea, bloating, gas), it should be eliminated from the diet for one to three months before being offered to the child again. Research suggests that by one year of age, most babies are able to tolerate foods that had earlier caused a reaction. Introducing babies to a variety of foods and flavors in the first two years of life may increase their likelihood to try new foods.

Babies should always be sitting up to eat or drink, and positioned so that they can see the face of the person feeding them. Mealtimes provide important opportunities for babies and their caregivers to smile, laugh, and enjoy eating together. In addition, babies should not be fed when parents are rushed or pressed for time. Also, babies' appetites can vary from day to day, and they will let caregivers know they are full by turning their heads away from the spoon or holding their lips closed. Babies should never be forced to eat after they have indicated fullness.

In children under two years of age, dietary fats play a key role in the formation of vital nerve and brain tissues. Health professionals do not recommend feeding reduced-fat foods to children of this age. For example, use of whole milk rather than low-fat or fat-free milk is advised.

To help guard against developing nursing bottle dental caries, caregivers should never put infants to bed with a bottle of milk, formula, or other liquid.

Growing Up

Nutrition recommendations for children over the age of two differ little from those for adults (see Backgrounder on Dietary Guidance). However, the recommendations for children are designed to promote optimal growth and development and therefore may not be as restrictive as those for adults. A wide variety of foods rich in essential nutrients is necessary for growing bodies, and forms the basis of these recommendations.

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Other Resources

American Academy of Pediatrics
http://www.aap.org

American Dietetic Association
http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/index.html

Centers for Disease Control and Prevention
http://cdc.gov

United Nations International Children's Emergency Fund (UNICEF)
http://www.unicef.org

MyPyramid for Kids
http://www.mypyramid.gov/kids/index.html

World Health Organization (WHO)
http://www.who.int/topics/child_health/en

Access additional **RESOURCES** and **UPDATES** on related topics at:
http://ific.org/nutrition/kids
http://kidnetic.com

As indicated in the U.S. Department of Agriculture's food guidance system, MyPyramid, such foods include carbohydrate-rich grains, fruits, and vegetables necessary to supply vitamins, minerals, fiber, and energy vital to good health. Adequate amounts of dairy products, lean meats, fish, poultry, eggs, dry beans, and nuts also provide nutrients that contribute to proper growth and development.

Most children will grow about two inches and gain about four to seven pounds per year. Between the ages of six and 12, youngsters will grow an average of one to two feet and almost double in weight. Diminished weight-for-height may be indicative of acute undernutrition; decreased height-for-age may suggest chronic undernutrition. Such growth underachievement may be due to malnutrition, psychosocial deprivation, eating disorders, underlying chronic disease, infection, or other factors.

While children often have definite food likes and dislikes, dietitians and nutritionists recommend parents make available a wide variety of foods and encourage the tasting of new foods in small quantities without forcing the issue. In this manner, children will often come to accept and like new foods. In addition, nutrition experts often urge parents not to insist that children "clean their plates." Children may benefit from choosing their own portion size, provided that the food is wholesome and nutritious. Finally, parents are advised to avoid using food to reward or punish behavior.

Teen Nutrition

Adolescents' caloric needs vary depending on their growth rate, degree of physical maturation, body composition, and activity level. However, they do need extra nutrients to support the adolescent growth spurt, which, for girls, begins at ages 10 or 11, reaches its peak at age 12, and is completed by about age 15. In boys, it begins at 12 or 13 years of age, peaks at age 14, and ends by about age 19.

In addition to other nutrients, adequate amounts of iron and calcium are particularly important as the adolescent body undergoes this intensive growth period. From ages nine to 18 years, both males and females are encouraged to consume a calcium-rich diet (1,300 milligrams daily) in order to ensure adequate calcium deposits in the bones. This may help reduce the incidence of osteoporosis in later years. The recommended calcium intake can be achieved by getting at least three cups of fat-free or low-fat milk daily or the equivalent amount of low-fat yogurt and/or low-fat cheese. For those who don't wish to consume dairy products, a variety of other calcium sources are available such as green, leafy vegetables, calcium-fortified soy products, and other calcium-fortified foods and beverages.

Meal Patterns

To meet energy needs, children and teens should eat at least three meals a day, beginning with breakfast. Studies show eating breakfast affects both cognitive and physical performance; that is, if a child eats breakfast, he or she may be more alert in school and better able to learn and to perform sports or other physical activities.

Snacks also form an integral part of meal patterns for children and teens. Young children often cannot eat large quantities of food at one sitting and often feel hungry before the next regular mealtime. Mid-morning and mid-afternoon snacks may be appropriate for this age.

Fast-growing, active teens may have tremendous energy needs. Even though their regular meals can be substantial, they still may need snacks to supply energy between meals and to meet their daily nutrient needs. For adolescents who are less active or who have already gone through the growth spurt, the role of snacking may need to be assessed.

Eating Disorders

Teens' food choices are often influenced by social pressure to achieve cultural ideals of thinness, gain peer acceptance, or assert independence from parental authority. These factors may increase a young person's risk for developing eating disorders. An eating disorder is an emotional and physical problem that is associated with an obsession with food, body weight, or body shape. A teenager with an eating disorder diets, exercises, and/or eats excessively as a way of coping with the physical and emotional changes of adolescence. The three most common types of eating disorders are anorexia, bulimia, and binge eating. Each type has its own symptoms and diagnosis.

Child & Adolescent Nutrition, Health & Physical Activity

According to the National Mental Health Information Center, as many as 10 million girls and women and one million boys and men are struggling with eating disorders such as anorexia nervosa (a disorder causing people to severely limit their food intake) or bulimia (a disorder in which people binge and purge by vomiting or using laxatives). Both anorexia and bulimia can lead to convulsions, kidney failure, irregular heartbeats, osteoporosis, and dental erosion. Those suffering from compulsive overeating or binge-eating disorder are at risk for heart attack, developing high blood pressure and high cholesterol, kidney disease and/or failure, arthritis, bone deterioration, and stroke.

The American Dietetic Association states that medical nutrition therapy and psychotherapy are two integral components in the treatment of eating disorders. These are such complex illnesses that the expertise of multi-disciplinary healthcare professionals is required.

Overweight and Obesity among Children and Adolescents

Adults are not alone in the concern about weight management. In addition to the increase in the prevalence of adults who are obese or overweight, adolescent and childhood obesity and overweight are also on the rise. Data from the National Health and Nutrition Examination Survey (NHANES 2003-2004), indicate that 14 percent of two to five year olds and 17 percent of children and adolescents ages 12-19 years in the United States are overweight. The prevalence of overweight children and adolescents has quadrupled and tripled, respectively, in the last 30 years. Only a small percentage of overweight children may attribute their problem to endocrine disorder or other underlying physical problems. Overweight and obesity can be determined by Body Mass Index (BMI). (See the Backgrounder on Overweight, Obesity & Weight Management in Chapter 5 for more information.)

When children are overweight, the *2005 Dietary Guidelines for Americans* recommend reducing the rate of weight gain while allowing for growth and development. Overweight children and adolescents are more likely to be overweight or obese as adults. Therefore, health professionals emphasize healthful eating and the importance of physical activity as a life-long approach to weight management and to overall good health and quality of life. Before placing a child on a weight control plan, a healthcare provider should always be consulted.

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Physical Activity for Children and Teens

Strong bones, good muscle tone, and lower risk of developing chronic diseases are some of the key benefits derived from regular physical activity. Furthermore, being physically active promotes psychological well-being and reduces feelings of depression and anxiety. According to the Centers for Disease Control and Prevention/Division of Adolescent and School Health, 77 percent of children aged nine to 13 years participate in free-time physical activity and only 39 percent engage in organized physical activity. Among high school students, 63 percent participate in vigorous physical activity and just 25 percent engage in sufficient moderate physical activity. Twelve percent engage in little or no physical activity at all.

Participation in physical activity tends to decline as children get older. The long-term consequences of physical inactivity include an increased risk of type 2 diabetes, high blood pressure, high blood cholesterol, asthma, arthritis, and premature death. To maintain good health status, the *Dietary Guidelines* and MyPyramid recommend that children and adolescents engage in at least 60 minutes of physical activity on most, preferably all, days of the week.